

# Advances in Offender Profiling: A Systematic Review of the Profiling Literature Published Over the Past Three Decades

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**Abstract** Despite the immense popularity of offender profiling as both a topic of fascination for the general public as well as an academic field of study, concerns have been raised about the development of this area of scientific inquiry. The present study provides a preliminary step towards moving the field forward as it reviews the type and quality of studies dealing with offender profiling over the past 31 years. Based on a content analysis of 132 published articles, the review indicates that researchers investigating this phenomenon rarely publish multiple articles, and they are generally reported across many different journals, thereby making knowledge synthesis and knowledge transfer problematic. In addition, the majority of papers published in the area are discussion pieces (e.g., discussing what profiling is, how profiles are constructed, and when profiling is useful), despite the fact that the processes underlying offender profiling are still not well understood. Finally, although peer-reviewed articles exploring this topic have steadily increased, the statistical sophistication of these studies is sorely lacking, with most including no statistics or formal analyses of data. Suggestions for future research and recommendations to streamline efforts in this field are provided based on the results of this review.

**Keywords** Offender profiling · Knowledge synthesis · Knowledge transfer

Although different definitions of profiling have been proposed (e.g., Geberth 1981; Rossi 1982; Vorpagel 1982), profiling is generally regarded as “a technique for identifying the major personality and behavioral character-

istics of an individual based upon an analysis of the crimes he or she has committed” (Douglas et al. 1986, p. 405). Since its occasional use in several well known, early cases (e.g., the Jack the Ripper murders), profiling has become a common investigative tool for prioritizing suspects and developing new lines of inquiry in serial crime investigations (Woodworth and Porter 1999). For example, in 1986, Douglas and Burgess reported that the Federal Bureau of Investigation’s Behavioral Science Unit received approximately 600 profiling requests per year. This number exceeded 1200 requests by 1996 (Witkin 1996). While there are no precise quantitative data on the use of profiling in other countries, the available literature indicates that profilers are frequently called on to provide investigative support all around the world (e.g., Åsgard 1998; Collins et al. 1998; Jackson et al. 1993).

Despite the popularity of offender profiling as an investigative technique, the vast majority of literature reviews have documented that this is more a result of its exposure in the media as opposed to empirical evidence documenting its effectiveness (Davies 1994; McCann 1992; Muller 2000; Smith 1993). Much of this attention has come from major Hollywood blockbusters detailing the lives of fictional profilers and their most riveting cases (e.g., *Silence of the Lambs*, *Taking Lives*, *Kiss the Girls*, etc.), and popular accounts of profiling (focusing largely on success stories) written by several pre-eminent profilers (e.g., Douglas and Olshaker 1995; Michaud and Hazelwood 1999; Ressler and Schachtman 1992). Kocsis (1999) has stated that this intense media attention has created a situation in which “a gross disparity has developed between profiling’s reputation and its actual capabilities” (p. 98).

One of the major shortcomings that is evident when reviewing the field of offender profiling is that there has been very little synthesis of the research to date to identify

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how things have developed, if at all, over the past 31 years. In the broader fields of forensic psychology and criminal justice, the statistical technique of meta-analysis has been utilized to summarize various research literatures to date in order to move the field forward (e.g., Andrews et al. 1990; Dowden and Andrews 1999, 2004). Although the amount and type of research conducted within the field of offender profiling by no means allows itself to be examined in this fashion, summarizing the extant literature would be nonetheless valuable.

From a research perspective, such a review could highlight important gaps in the area, thereby identifying potentially productive future directions for the field (e.g., in terms of research topics). At the same time, the review would reduce the likelihood of unnecessarily replicating/repeating research that has already been sufficiently focused on. From a practical, policy-oriented perspective, this review will provide a clear indication of what we are currently basing the practice of profiling on. For example, the review will address the question of whether profiling practices are based on an adequate body of peer-reviewed empirical evidence, as some have implied (e.g., Homant and Kennedy 1998), or whether such evidence is lacking, as others have suggested (e.g., Alison et al. 2002). Such considerations will also shed light on the extent to which profiling evidence meets current legal standards, which is a topic receiving considerable attention (e.g., Ormerod 1996a, b).

Thus, the purpose of this article is to conduct a preliminary quantitative synthesis of the offender profiling literature to date (from 1976 to 2007). Specifically, a content analysis of published articles will explore whether increased academic interest in this area has occurred and in what fields this research is currently being conducted. In addition, the most active journals in terms of publication frequency will also be explored along with the most widely published researchers in the area. Furthermore, an examination of what type of information is reported in the articles will be undertaken. Finally, a review of the statistical sophistication of these studies will be completed, and the degree to which the studies are being peer-reviewed will be determined, to provide an indication of how the field has developed over the years. The article will conclude with suggestions for future research and recommendations to streamline efforts in this field based on the results of this review.

## Method

### Sample of Studies

The present study represents a content analysis of the available published research literature on offender profiling

as of March 2007. More specifically, several major psychological, criminological, and medical journal databases such as *Medline*, *PubMed*, *PsycINFO*, and the *National Criminal Justice Reference System* were examined to identify suitable candidates for inclusion using the key words: profiling, psychological profiling, offender profiling, criminal profiling, criminal investigative analysis, crime scene analysis, criminal personality profiling, serial murder, serial homicide, serial killer, serial killing, serial rape, serial arson, serial crimes, mass murder, mass killing, multiple murder, and multiple homicide. Finally, the reference sections of each of the included studies were also examined for any other potential studies. Any article that was published before March 1st 2007, which dealt with the subject of profiling, was selected for inclusion in this review. Excluded from the review were books and book chapters dealing with offender profiling, as well as any unpublished documents.<sup>1</sup> In addition, articles on geographic profiling and linkage analysis were not included. Both of these areas of research have an extensive body of literature in their own right and, as investigative tasks, both rely on methods that are very different from those used for offender profiling.

### Coding Manual and Method of Classification

The coding manual for the content analysis was developed by the authors to offer a simple way of summarizing the characteristics of each individual study. The items coded in the present analysis, as well as their corresponding definitions, are presented in the [Appendix](#). The year of publication, author affiliation, type of crime studied, emphasis of the article, statistical sophistication of the analysis, and whether or not the article was published in a peer-reviewed journal, were all considered relevant variables. The third author coded all the articles in the first instance with a research assistant coding a random selection of 25% of the articles for the purpose of establishing inter-rater reliability. Cohen's kappa was used to assess reliability. With the exception of crime type (.51)<sup>2</sup> all other kappa values were in the satisfactory range – author affiliation (.77), emphasis (.80), statistical sophistication (.95), and

<sup>1</sup> In contrast to quantitative summaries of experimental effects, where it is important to include unpublished documents to minimize any potential publication biases (e.g., a tendency for journals to accept manuscripts that report statistically significant findings), omitting unpublished documents from quantitative reviews of the current type is less of a problem.

<sup>2</sup> The problem here was one of distinguishing between cases where a specific crime type was simply mentioned on numerous occasions in an article and cases where that specific crime type was really the focus of the article.

peer reviewed (.91). In all cases of disagreement, the coders met to come to an agreement and the coding was revised.

## Results

One hundred and thirty-two studies were identified as suitable for inclusion through the literature search and were content analyzed (these articles are marked with an asterisk in the reference section).

### Trends in Publications

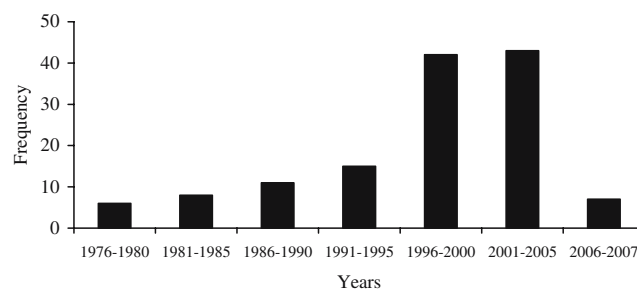
Before analyzing the specific factors that we coded, we explored the trends in publications over time. A decision was made to divide the 31-year period from 1976 to 2007 into five-year intervals. The year 1976 was selected as the starting point for this review as the earliest article found on the topic was published in that year. Dividing this 31-year period into mostly equal time intervals allowed for a reasonable test of the trends in publications over time to see whether interest in this area is truly increasing. Clearly, inspection of Fig. 1 reveals that the number of publications dealing with offender profiling has increased substantially since 1976.<sup>3</sup>

### Journals, Authors, and Affiliation

Tables 1 and 2 present the frequencies of journals and authors that published articles in this area. It should be noted that, in total, 53 separate journals were responsible for publishing the entire sample of articles reviewed, with the majority (60.40%) publishing only one article. Even using the liberal criterion of a minimum of three publications involving profiling, only 17 journals either met or surpassed that number (see Table 1).<sup>4</sup>

The journal most frequently publishing articles in this area is the *International Journal of Offender Therapy and Comparative Criminology* (13.64%,  $n=18$ ), followed by the *FBI Law Enforcement Bulletin* (6.82%,  $n=9$ ).

In terms of authorship, using the same cut-off criterion of three publications in the area, 18 individuals met this standard. It should be noted that this analysis was conducted both including and excluding the *FBI Law Enforcement Bulletin* in the article count, since it was felt that this “journal” may provide an unfair advantage to FBI agents (given that it is an internal publication of the FBI and may artificially inflate their number of publications). This fact was confirmed, as the rank orderings of authors



**Fig. 1** Frequency of articles published on offender profiling every five years since 1976

changed when articles published in this outlet were excluded from the frequency analysis (see Table 2).<sup>5</sup>

Finally, an analysis was also conducted to determine the primary affiliation of the study authors. This was done to establish which discipline has contributed most to the literature on offender profiling. Affiliation assignment was done by examining all authors on an article – a particular discipline was assigned when at least 75% of the authors were from the same field of research (e.g., psychology). If this could not be done, the affiliation was deemed multidisciplinary. The results of this analysis are presented in Table 3.

In terms of affiliation, psychologists have contributed the most research to this field (34.09%,  $n=45$ ). Research conducted by a multidisciplinary team, which has been stressed as an important area for development in the future (McGrath 2000), contributed the second most with 28.03% ( $n=37$ ). The remaining areas have essentially been equally active.

### Crime Type

The type of crime that was focused on in each of the 132 articles was also examined. Based on their content, each article was assigned to one of 10 crime types: serial homicide, rape, arson, homicide, burglary, unspecified, mixed, random violence, child crimes, and other. It is clear from Fig. 2 that the majority of articles focused on an unspecified type of crime (41.67%,  $n=55$ ), and spoke generally to the subject of profiling, followed by homicide (19.70%,  $n=26$ ), rape (11.36%,  $n=15$ ), serial homicide (10.61%,  $n=14$ ), and the remainder of the crimes.

### Emphasis

Each article in the sample was assigned to one of 10 emphases: case study, comparison study, theoretical study, evaluation study, experimental study, basic assumption

<sup>3</sup> Note that the last column in this graph only covers a two-year period (2006 and 2007).

<sup>4</sup> In the event of a tie, the journals were arranged alphabetically.

<sup>5</sup> In the event of a tie, the authors were arranged alphabetically by their last name.

**Table 1** Rank ordering of journals that most frequently publish articles dealing with offender profiling

Name of Journal	Number of articles
<i>International Journal of Offender Therapy and Comparative Criminology</i>	18
<i>FBI Law Enforcement Bulletin</i>	9
<i>Journal of Investigative Psychology and Offender Profiling</i>	6
<i>Homicide Studies</i>	6
<i>Legal and Criminological Psychology</i>	5
<i>Behavioral Sciences and the Law</i>	4
<i>Criminal Justice and Behavior</i>	4
<i>Forensic Science International</i>	4
<i>Journal of Contemporary Criminal Justice</i>	4
<i>Journal of Interpersonal Violence</i>	4
<i>Police Chief</i>	4
<i>Psychology, Public Policy, and Law</i>	4
<i>American Journal of Forensic Psychology</i>	3
<i>The Criminologist</i>	3
<i>Journal of Forensic Psychiatry</i>	3
<i>Law &amp; Order</i>	3
<i>Psychology, Crime, and Law</i>	3

study, descriptive study, literature review, discussion piece, or legal implication study. Fig. 3 shows that the two emphases that are most predominant are discussion pieces (28.79%,  $n=38$ ) and basic assumption studies (27.27%,  $n=36$ ).

**Table 2** Number of journals articles authored or co-authored within academic journals both including and not including FBI Law Enforcement Bulletin

Author	Publications (including <i>FBI LEB</i> )	Publications (not including <i>FBI LEB</i> )
Kocsis, R.N.	18	18
Canter, D.V.	12	12
Hazelwood, R.R.	10	6
Alison, L.J.	8	8
Douglas, J.E.	8	2
Warren, J.	8	7
Burgess, A.W.	5	2
Irwin, H.J.	5	5
Ressler, R.K.	5	2
Davis, J.A.	4	4
Geberth, V.J.	4	4
Häkkinen, H.	4	4
Hayes, A. F.	4	4
Reboussin, R.	4	3
Salfati, C.G.	4	4
Bennell, C.	3	3
Cooksey, R.W.	3	3
Ormerod, D.	3	3
Santtila, P.	3	3

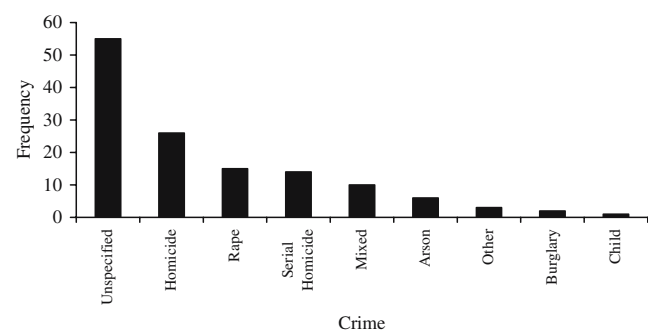
**Table 3** Rank ordering of academic affiliation of study authors for articles dealing with offender profiling

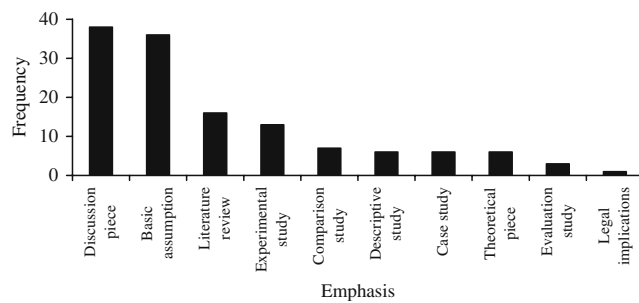
Primary affiliation of study authors (>75%)	Articles	
	%	n
Psychologists	34.09	45
Multidisciplinary	28.03	37
Other	12.87	17
Police	8.33	11
FBI Agents	6.81	9
Criminologists	5.30	7
Forensic Psychiatrists	3.03	4
Unknown	1.51	2

### Statistical Sophistication

To explore the sophistication of the studies, we examined whether the authors employed statistical techniques to arrive at their conclusions. Articles were assigned to one of three categories, based on their level of statistical analyses: no statistics, descriptive statistics, or inferential statistics. Clearly, articles based on quantitative explorations of data typically yield more reliable conclusions than those that do not use these techniques. Unfortunately, nearly two-thirds (56.81%,  $n=75$ ) of the studies reviewed did not include any form of statistical analysis. Thus, the majority of studies in the field are based on non-systematic reviews of the literature or the opinions of the study authors.

However, over time, the pattern of statistical sophistication has changed significantly. For example, as illustrated in Fig. 4, when examining articles before and after 1995, a significant association is found ( $\chi^2=4.96$ ,  $df=2$ ,  $p<.05$ ). Most studies published before 1995 did not include any statistical analysis (72.73%,  $n=24$ ), with only 12.12% ( $n=4$ ) including inferential statistics. In contrast, while half of the studies conducted in the last 10 or so years still do

**Fig. 2** Frequency of articles published with a focus on a specific crime type



**Fig. 3** Frequency of articles published with a certain emphasis

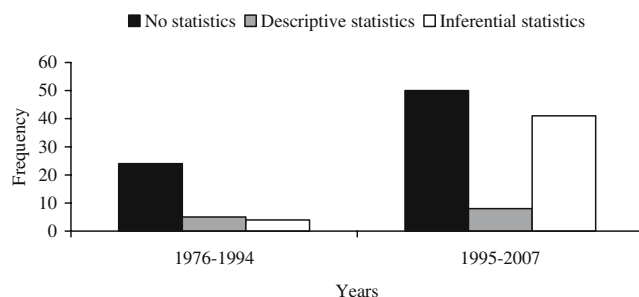
not report any statistical analyses (50.51%,  $n=50$ ), the proportion of articles including inferential statistics has greatly increased (41.41%,  $n=41$ ).

### Peer Review

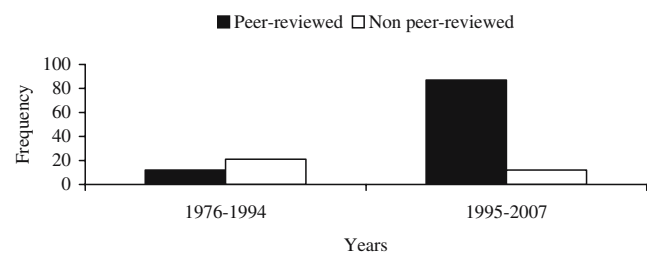
The majority of the articles included in this sample were published in peer reviewed sources (75%,  $n=99$ ). However, this has not always been the case, as indicated by an examination of articles published before and after 1995 ( $\chi^2=35.03$ ,  $df=1$ ,  $p<.001$ ) (Fig. 5). Prior to 1995, less than half of the articles that dealt with the subject of offender profiling were published in peer reviewed journals (36.36%,  $n=12$ ). Since 1995, this has dramatically changed, with the vast majority of articles being peer reviewed prior to publication (87.88%,  $n=87$ ).

### Discussion

The present study marks the first quantitative summary of the literature on offender profiling to date. Stepping back and reflecting on the development of a field as a whole is a necessary step for knowledge construction to occur. Although this was a preliminary review, the results still shed light on avenues for future research and recommendations for moving the field forward.



**Fig. 4** Statistical sophistication of articles before and after 1995



**Fig. 5** Frequency of articles that were peer reviewed before and after 1995

### Trends in the Research

Clearly, researchers who have claimed that there has been a relative explosion of interest in the field of offender profiling over time (e.g., Hickey 2002; Holmes and Holmes 1998; Jenkins 1988) are supported to some extent by the historical trend in publications reported in this paper. Over the past 31 years, the number of articles being published on the topic of offender profiling has grown at a fairly rapid rate. The general acceptance of profiling as a suitable subject for academic study is also apparent when one considers the growing number of Master's and Doctoral theses completed in this area (e.g., Fritzon 1998; Kendall 1999; Salfati 1998), and the numerous profiling-related courses being offered to students through accredited universities (e.g., Bond University, University of Liverpool, Vermont College). These trends in offender profiling research have added some much needed credibility to the field and there is little doubt that the trend in publications that we have reported here will continue.

### Where can the Research be Found?

Some journals have clearly had more of an impact on this publication trend than others. The journal publishing most of the articles in the area of offender profiling is the *International Journal of Offender Therapy and Comparative Criminology*, with a total of 18 out of the 132 existing articles being published in this outlet. The *FBI Law Enforcement Bulletin* comes in at a distant second, with a total of 9 profiling articles being published in the last 31 years. All of the other journals that came up in our search (53 in total) have published very few articles on the topic of offender profiling, and this is cause for some concern. For a field to grow, research must unfold in a cumulative fashion, with new research systematically building on research that has already been conducted. Accomplishing this will be more difficult when the work is being published in a haphazard fashion across 53 different journals, simply because the research is much more difficult for people to track.



The reason for this low publication rate (per journal) is unclear. It may be that research in this area is being submitted to specific journals but being rejected, and then submitted elsewhere. Journal rejection rates alone would suggest that this is a distinct possibility (rejection rates for many forensic journals exceed 80–90%). The fact that offender profiling is a topic that has historically been viewed as more art than science (Muller 2000) may make research in this area particularly prone to rejection in peer-reviewed academic journals. On the other hand, it is also possible that researchers are simply opting to submit their work to a diverse range of journals (although there are a few clear exceptions, as in the case of Richard Kocsis, who publishes frequently in the *International Journal of Offender Therapy and Comparative Criminology*).

Despite the low publication rate in most journals, there are several reasons to be reasonably optimistic about the outlook of research in the area of offender profiling. For example, our results indicate that profiling research is now being accepted for publication in several top-tier academic journals. Over the last five years, the American Psychological Association's flagship journal in the area of forensic psychology, *Psychology, Public Policy, and Law*, has accepted four articles that have dealt with different aspects of offender profiling (Alison et al. 2002, 2004; Canter et al. 2004; Woodhams and Toye 2007). Similarly, *Criminal Justice and Behavior*, ranked second overall for its impact in the field of criminology, has published several profiling-related articles in recent years (e.g., Canter and Wentink 2004; Homant and Kennedy 1998). On another positive note, a relatively new peer-reviewed journal, the *Journal of Investigative Psychology and Offender Profiling*, has been launched by David Canter (in 2004). This journal is clearly giving researchers who study offender profiling a forum for publishing their work, as indicated by the six profiling-related articles that have already appeared in this journal's pages.

#### Who is Conducting the Research?

As is the case with journals in the area, the majority of research on offender profiling is being published by just a few individuals. Indeed, only 18 out of the 160 or so authors that emerged from our review have published three or more articles on the subject. There are a number of possible explanations for this. First, while there are very few individuals who conduct research in this area, there are even fewer who dedicate the majority of their efforts to the study of offender profiling. Again, Richard Kocsis, the top publisher on our list with 18 profiling-related articles, is one of the few exceptions. Second, the field of offender profiling is relatively unique in the sense that many of the people conducting research in the area do not have, as their

primary goal, the publication of research. For instance, many of the FBI agents who conduct research in this area are, first and foremost, investigative consultants, not researchers. The consequence of these two issues is that few research questions in the area of offender profiling have received the unfaltering attention from researchers that is typically required to arrive at concrete answers.

As indicated in our analysis of author affiliations, psychologists are publishing more than anyone else in the field of offender profiling, accounting for approximately 34% of all articles. Of course, many psychologists are also involved in multidisciplinary research so this is an underestimate of their involvement in the area. To a large extent, the impact that psychologists have had on the field can be attributed to two individuals, namely Richard Kocsis and David Canter. Both of these individuals have had a significant impact on the field (Winerman 2004), and much of what is currently known about profiling can be attributed to them.

Individuals from the FBI have been criticized from a variety of sources in terms of the work they do (e.g., Canter 2000; Godwin 1998, 2002; Muller 2000), however, there is no denying that they are among some of the most active contributors to this line of scientific inquiry. Roy Hazelwood, John Douglas, and Robert Ressler in particular have contributed significantly to the existing research. In fact, this review may be seen as a conservative testament to that fact, as books and book chapters examining profiling were excluded. In addition to their peer-reviewed research, all three of these individuals have authored classic texts in the field of offender profiling (e.g., Douglas et al. 1992; Hazelwood and Burgess 1987; Ressler et al. 1988), not to mention their many popular books (e.g., Douglas and Olshaker 1995; Michaud and Hazelwood 1999; Ressler and Schachtman 1992).<sup>6</sup>

FBI researchers also clearly have to be acknowledged for their multidisciplinary work in the area, much of which has moved the field forward. Indeed, a high percentage of research conducted by multidisciplinary teams (approximately 28% of all research in the area) can be attributed to the collaborations that FBI researchers have developed with a range of academics. Anyone who conducts research on offender profiling will know of the long-standing and very productive relationships between FBI researchers and individuals such as Ann Burgess (e.g., Burgess et al. 1980; Douglas and Burgess 1986; Douglas et al. 1986) and Janet Warren (e.g., Dietz et al. 1990; Hazelwood and Warren 1990, 2000; Warren et al. 1996). While such a multidisciplinary approach has been advocated by numerous individuals (e.g., Alison et al. 2004; McGrath 2000; Turvey 2002), long-standing multidisciplinary teams in this

<sup>6</sup> This is also true of course for many of the other researchers included in the sample (e.g., David Canter).

area are a rarity. FBI researchers and their collaborators should be commended for setting a good example of what can be accomplished when such multidisciplinary teams exist.

#### What Type of Information is Reported and How is it Conveyed?

In terms of the crimes focused on when conducting research in this area, the vast majority of authors are not specifying any one type. Indeed, approximately 41% of all articles discuss profiling as it relates to crime in general, instead of focusing on applying profiling techniques to particular types of crime. When a particular type of crime is focused on, it is most likely to be homicide, followed by serial homicide and rape. This finding makes sense given that profiling appears to be used most often for these types of interpersonal crimes (Holmes and Holmes 2002; Trager and Brewster 2001). It will be interesting to see over the next few years how this emphasis changes given that some individuals have recently provided persuasive arguments that offender profiling is just as plausible for property crimes, such as arson and burglary (Canter and Alison 2000; Canter and Fritzon 1998). It will also be interesting to see whether non-conventional serial crimes, such as contract killings and extremist terrorism, begin to receive more attention from researchers.

As for the ways in which the research is conducted, far from providing a solid base of empirical evidence to support the practice of offender profiling, the majority of studies published to date are discussion pieces focusing on what profiling is, how profiles are constructed, and when profiling is useful. Without trying to detract too much from the potential value of this research, to many, this research is premature given that the processes underlying offender profiling are still not well understood (Hicks and Sales 2006). With some notable exceptions (e.g., Canter 2000), these processes have yet to be formally articulated by anyone, let alone tested. Despite their respectable level of activity, this criticism must be directed largely at FBI researchers, since the vast majority of their articles are discussion pieces written from an experiential and/or anecdotal perspective (e.g., Douglas and Burgess 1986; Douglas and Munn 1992; Hazelwood and Douglas 1980).

Instead of discussion pieces (approximately 30% of all published articles), literature reviews (approximately 12% of all published articles), and case studies (approximately 5% of all published articles), what is desperately needed are studies that lay down the theoretical foundation of profiling practices and systematic tests of these theories (Hicks and Sales 2006). Over the past 31 years, only 5% of published articles have dealt with theoretical issues, although there has been a steady increase in research that has tested basic profiling assumptions (approximately 27% of all published

articles). The basic assumptions that have received the most attention from researchers include the stability of offending behavior over time, the consistency of offenders' behavior between the criminal and non-criminal domains, and the possibility that structure can be found in crime scene behaviors and offender background characteristics. The majority of research examining basic profiling assumptions has, perhaps unsurprisingly, been conducted by psychologists (e.g., Canter and Fritzon 1998; Canter et al. 2003; Kocsis et al. 1998, 2002a, b, Salfati and Canter 1999).

While this "basic assumptions" research has the potential to be extremely useful, it is difficult to know what to make of it, and where to take it, without a clearly defined theoretical framework. Indeed, as Hicks and Sales (2006) have recently made clear, it is difficult to interpret the meaning of *any* profiling research in the absence of sound theory since theories provide the testable "body of principles to explain how and why the profiling process works" (p. 14). Unfortunately, as Canter (2000) has argued, theory development in this field is likely to occur at a relatively slow pace because "the development and test[ing] of theories...does not have the same dramatic power, or excitement, as the lone private investigator cracking the crime where the police have been unable to" (p. 44).

#### Sophistication of the Research

Unfortunately, despite the surge in the popularity of this field, the methodological sophistication of research in the area is also sorely lacking. For example, the results from the current analysis indicate that the majority of publications on offender profiling do not present any statistical analyses. However, since 1995, some steps have clearly been taken by researchers to address this issue, with a substantial increase in the proportion of studies consisting of inferential statistics of some kind. In the future, researchers should continue to ensure that some minimal level of statistical or methodological sophistication is achieved in their studies so that individuals working in the field of profiling can be confident in the validity of their results. If this does not occur, researchers, practitioners, and the courts alike run the risk of placing faith in research that is of questionable value.

As a case in point, one of the best examples of placing faith on potentially questionable research is the heavy reliance on FBI "principles" of profiling (in particular, the organized-disorganized model of serial homicide first proposed by Hazelwood and Douglas 1980). The vast majority of these principles are based on research that was conducted over 25 years ago on a non-random sample of sexual murderers that were interviewed by FBI agents. Since these interviews were conducted, the FBI have provided profiling training to literally thousands of law enforcement officers and the organized-disorganized ap-

proach to profiling is clearly one of the primary methods used by modern day profilers (Muller 2000; Woodworth and Porter 1999). However, until very recently, there has been no attempt to empirically validate this FBI profiling method. Instead, FBI agents have published lengthy pieces discussing how and when these techniques should be used (e.g., Douglas et al. 1992), and numerous case studies that have provided evidence of their success when using the organized-disorganized model (e.g., Ressler et al. 1986). A recent validation attempt (Canter et al. 2004) indicated that the statistical evidence in support of the organized-disorganized approach is extremely weak, pointing to the possibility that many FBI-trained profilers may be relying on an invalid system for constructing their profiles. Perhaps if methodologically sophisticated studies had been conducted before this time, profiling approaches could have improved at a faster pace.

Methodologically sophisticated studies also need to be conducted to ensure that profiling approaches generalize across different types of crimes and across crimes committed in different cultures. For example, no discussion piece will tell us whether current profiling approaches are likely to work equally well in serial homicide cases involving young women versus elderly women. We need statistically sound research of the type recently conducted by Safarik et al. (2000) to answer these types of questions. Nor can case studies tell us whether profiling methods that appear useful in the United States can be directly transported to help solve serial crimes in other countries. We need research of the type conducted by Salfati and Haratsis (2001) before this can be determined. One has to look no further than the recent profiles constructed in the Washington Sniper case to appreciate the value of methodologically sound studies. In that case, numerous profilers made inaccurate predictions about the likely characteristics of the unknown offenders in large part because there is, as yet, no empirical research dealing with crimes committed in the way that the snipers committed their crimes (Canter 2003).

#### Achieving these Recommendations

Despite the recommendations that we have made in this article, it should be noted that several characteristics of this field make improving the current state of affairs difficult. One of the major obstacles confronting this area is access to reliable and accurate data. A small number of researchers have relied on interviews with serial offenders as the source of their data, while a larger number acquire their data from third-party sources, such as newspaper accounts, trial transcripts, police databases, and the like. The reliability and accuracy of all this information is limited in various ways. For example, it is known that offenders often lie about their

criminal behavior (Porter and Woodworth 2007) and that archival data (e.g., police data) is likely to be problematic for a whole host of reasons (e.g., due to variations in collection protocols, a disregard for the meaning of behavior within different contexts, the guiding of victim statements to increase the probability of prosecution, distortions resulting from personal agendas, etc.) (Alison et al. 2001). The impact of these issues on the conclusions drawn from studies in the profiling field has yet to be tackled in a systematic way. Ideally, researchers should attempt to collect data from a variety of sources when conducting their studies as a way of minimizing the problems associated with each individual source of data. There is no doubt that this will be a monumental task, and will require close collaboration between law enforcement personnel and academics.

Another major obstacle is the practical problems associated with conducting “good” studies in the field of offender profiling. Research in this area is often plagued by low levels of validity, in particular external validity, making the results that emerge from these studies questionable. Recognizing these validity problems is not difficult. Developing ways of dealing with these problems is. As but one example of where this issue has arisen, the second author has recently examined validity issues in the so-called “comparison studies” (e.g., Kocsis 2003b; Pinizzotto and Finkel 1990) that have been reviewed in this paper (Bennell et al. 2006). These studies examine how various groups of individuals (e.g., profilers, psychologists, students, etc.) perform on profiling tasks in order to determine if professional profilers are the most effective profilers. The validity problems in these studies range from low participation rates to unrealistic testing conditions. Everyone can see how and why these issues are important, but they are extremely difficult to eliminate.

Despite these obstacles, some positive changes can be made. Perhaps the most important area for future development is in the form of theoretical advancement. Clearly articulating the theoretical underpinnings of profiling and outlining how various profiling assumptions fit within the specified theoretical parameters is an important and necessary step forward for the field of offender profiling (Canter 2000; Hicks and Sales 2006). As of yet, very few attempts have been made to do this. In addition, while the field has made advances in terms of its increased usage of statistical analyses, it is of paramount importance to ensure this trend continues. As the popularity in the field continues to rise, ensuring that articles are based, at least in part, on empirical data, rather than anecdotes and case studies, will be necessary for ensuring that the field has a credible foundation on which to build. Furthermore, the increased use of multidisciplinary research teams should be a focus in the future (especially academic-practitioner relationships). Others have discussed the importance of such teams in



some detail (e.g., Alison et al. 2004). Amongst the many advantages of this approach is that multidisciplinary research can capitalize on the particular skills that each party brings to a project. For example, this type of research can draw on the advanced methodological skills of academics and the practical knowledge of law enforcement personnel to result in statistically sophisticated research that has some real world value. Other advantages may include easier access to data and participants.

## Conclusion

Despite the fact that offender profiling has become a standard investigative tool in many police jurisdictions, and is slowly finding its way into the courtroom, this review highlights several reasons for concern. For example, while the number of profiling-related publications has increased dramatically over the years, researchers investigating this phenomenon rarely publish multiple articles, and they are generally published across many different journals. In addition, the majority of papers published in the area are discussion pieces, despite the fact that the processes underlying offender profiling are still not well understood from a theoretical perspective. Furthermore, while researchers are submitting their work for peer review much more frequently now than they did in the past, the statistical sophistication of profiling studies is still sorely lacking, with over half of the studies published since 1995 including no statistical analyses at all. As we have hopefully made clear in our discussion, a number of things can be done to improve this state of affairs. Our hope in writing this article is that the next review of the profiling literature will find that studies have addressed many of the limitations outlined in the present review and that this will have led to profiling being viewed as a more legitimate field of study within the behavioral sciences.

## Appendix

### Coding guide

1. Authors: Name of study authors
2. Affiliation: Discipline of study authors
  1. Psychologists (>75%)
  2. FBI agents (>75%)
  3. Sociologists (>75%)
  4. Criminologists (>75%)
  5. Forensic Psychiatrists (>75%)
  6. Police (>75%)
  7. Multidisciplinary
  8. Other (please specify) (>75%)
3. Year: Date of publication

4. Journal: Name of journal
5. Crime Type:
  1. Serial homicide
  2. Rape
  3. Arson
  4. Homicide
  5. Burglary
  6. Child crimes
  7. Unspecified
  8. Mixed
  9. Other
6. Emphasis: Main emphasis of the article
  1. Case study: An article that reviews one or several case studies
  2. Comparison study: An article that compares various groups in terms of their performance on a profiling task
  3. Theoretical piece: An article that presents theories about new directions in the field
  4. Evaluation study: An article that evaluates specific profiling methods/techniques
  5. Experimental study: An article that presents an experiment related to profiling (i.e., controlled conditions used to test specified hypotheses)
  6. Basic assumption study: An article that tests any of the basic assumptions inherent in profiling (i.e., temporal stability, cross-situational consistency, structure in crime scene behaviours and/or background characteristics, etc.)
  7. Descriptive study: An article that describes in detail the process of profiling
  8. Literature review: An article whose sole purpose is to review, in detail, past studies done on profiling
  9. Discussion piece: An article with no real academic basis, but rather a brief discussion of past ideas, cases, techniques, or theories (there may be a fine line between this category and some literature reviews, but literature reviews are more focused)
  10. Legal implications: An article dealing with any of the legal implications associated with profiling
7. Statistical sophistication: Level of statistics employed in the study
  0. Zero statistics used
    1. Descriptive statistics used
    2. Inferential statistics used
8. Peer Reviewed: Is the article from a peer-reviewed journal
  0. No
  1. Yes

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